

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4-7, 9, 10, 12-15, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 9, and 17, the phrase "sufficiently small" renders the claim(s) indefinite because the it is not clear what size is actually disclosed (those encompassed by "sufficiently small"), thereby rendering the scope of the claim(s) unascertainable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-7, 9, 10, 12-15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Patrick (6,203,857).

In Re claims 1, 9, and 17, Patrick discloses a device for delivering a lubricating and/or cooling fluid near the contact area between a tool and a workpiece (24), comprising at least a circuit (see fig. 1) for circulation of said fluid and delivering means

to deliver said fluid near, or in correspondence of, the contact area between said tool and said workpiece, characterized in that said delivering means include one or more nozzles (33) configured to atomize the fluid (see example 1). The nozzle spays a fan shaped jet (see col. 7, lines 45-50) of particles having a sufficiently small (atomized) and substantially homogenous dimensions (see abstract).

In Re claims 2 and 10, the nozzle has a delivering orifice having a diameter between 0.10 mm and 0.80 mm (see col. 7, lines 45-50).

In Re claims 4 and 12, the nozzle has a spray angle of the jet between 10 and 80 degrees (see col. 7, lines 45-50).

In Re claims 5, 6, 13, and 14, Patrick discloses pressures between 5 and 70 bar (see col. 7, line 39). Additionally, claim elements "means to supply" is a means plus function limitation that is understood to invoke 35 U.S.C. 112, sixth paragraph. Patrick discloses conduits (34).

In Re claims 7 and 15, see figs. 4 and 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 9, 10, 12-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McConkey (5,494,134) in view of Raghavan et al. (5,417,607).

In Re claims 1, 9, and 17, McConkey discloses a device for delivering a lubricating and/or cooling fluid near the contact area between a tool and a workpiece being machined (see fig. 5), comprising at least a circuit (30) for circulation of said fluid and delivering means to deliver said fluid near, or in correspondence of, the contact area between said tool and said workpiece, characterized in that said delivering means include one or more nozzles (36). McConkey fails to teach a fan shaped spray pattern.

Raghavan et al. teach a nozzle spraying a fan shaped spray of fluid (see figs. 4-5 and 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the nozzle of McConkey to have a fan shaped spray, as taught by Ragavan et al., to allow the fluid to be sprayed across the tool and workpiece surfaces to selectively remove a layer of material from the surface evenly and completely, without damaging the tool or workpiece, and to also ensure an even or complete coating of the tool and workpiece.

In Re claims 2 and 10, the nozzle has a delivering orifice having a diameter between 0.10 mm and 0.80 mm (see col. 3, lines 50-51 of McConkey).

In Re claims 4 and 12, the nozzle has a spray angle of the jet between 10 and 80 degrees (see col. 3, line 56 of McConkey).

In Re claims 5, 6, 13, and 14, see col. 4, lines 63-64. Additionally, claim elements "means to supply" is a means plus function limitation that is understood to invoke 35 U.S.C. 112, sixth paragraph. McConkey discloses conduits (see figs. 1 and 6).

In Re claims 7 and 15, see fig. 5.

Response to Arguments

In response to applicant's argument regarding the improvements in the cooling action of the present invention, the examiner points out that all limitations recited in the claims regarding spray angle, spray pressure, and orifice diameter, are disclosed by the references.

In response to applicant's arguments about heat removal, the examiner points out that the claims contain no limitations regarding heat removal from a workpiece during machining.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS IRVIN whose telephone number is (571)270-3095. The examiner can normally be reached on M-F 10-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Irvin/
Examiner, Art Unit 3657

/Bradley T King/
Primary Examiner, Art Unit 3657